IN THE CLAIMS:

Please cancel Claims 1-16, without prejudice to or disclaimer of the subject matter recited therein. Please add new Claims 17-31, as follows.

1-16. (Canceled)

17. (New) An apparatus comprising:

a mirror having a reflection surface that reflects light;

a heat-radiation plate arranged opposite and spaced away from said reflection surface of said mirror and outside a passage area for the light to be incident on and reflected from said reflection surface; and

a cooling mechanism configured to cool said heat-radiation plate.

18. (New) An apparatus according to claim 17, further comprising a thermometer configured to detect the temperature of said mirror, wherein said cooling mechanism is configured to cool said heat-radiation plate based on the detection obtained by said thermometer.

19. (New) An apparatus according to claim 17, wherein said heat-radiation plate is separated and arranged at plural positions so as to comprise separated plural heat-radiation plates.

20. (New) An apparatus according to claim 19, wherein the passage area is arranged between said separated plural heat-radiation plates.

21. (New) An apparatus according to claim 19, wherein one of said separated plural heat-radiation plates is arranged opposite said reflection surface of said mirror, and another of said separated plural heat-radiation plates is arranged opposite an outer surface, of said mirror, different from said reflection surface.

22. (New) An apparatus according to claim 17, wherein said heat-radiation plate has a form corresponding to the form of said reflection surface of said mirror.

23. (New) An apparatus according to claim 19, wherein said cooling mechanism is configured to cool said separated plural heat-radiation plates individually.

24. (New) An apparatus according to claim 17, wherein said cooling mechanism is configured to cool said heat-radiation plate by circulating coolant.

25. (New) An apparatus according to claim 24, wherein said cooling mechanism includes:

a first thermometer configured to measure the temperature of said mirror;

a second thermometer configured to measure the temperature of the coolant; and

a controller configured to estimate the amount of the light incident on said mirror and to control the temperature of the coolant based on the measurement obtained by said first thermometer and said second thermometer and the estimated amount of the light.

26. (New) An apparatus according to claim 25, wherein said first thermometer is a radiation thermometer arranged away from said mirror.

27. (New) An apparatus according to claim 17, wherein said cooling mechanism includes:

a solid heat-transfer element attached to said heat-radiation plate and configured to transfer heat from said heat-radiation plate; and

a circulation mechanism configured to circulate coolant so as to cool said solid heat-transfer element.

28. (New) An apparatus according to claim 12, further comprising:

a mirror barrel that accommodates said mirror;

a mirror support, fixed to said mirror barrel, that holds said mirror in said mirror barrel; and

a heat-radiation plate support, fixed to said mirror barrel, that holds said heat-radiation plate in said mirror barrel.

29. (New) An exposure apparatus for exposing a substrate to light via a reticle, said apparatus comprising:

an apparatus as defined in claim 17, wherein said mirror is configured and positioned to guide the light to the substrate.

30. (New) An exposure apparatus according to claim 29, wherein said apparatus as defined in claim 17 comprises one of a light source apparatus configured to generate the light, an illumination apparatus configured to guide the light from a light source to the reticle, and a projection apparatus configured to project the light from the reticle to the substrate.

31. (New) A method of fabricating a device, said method comprising steps of:

exposing a substrate to light via a reticle using an exposure apparatus as defined in claim 29;

developing the exposed substrate; and

processing the developed substrate to fabricate the device.